

Accredited Standards Committee*

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Reply to: John Lohmeyer

To: T10 Membership
From: Ralph Weber and John Lohmeyer
Subject: SCSI Commands, Architecture, & Protocol Working Group Meeting -- January 10-11, 2006
Phoenix, AZ

Agenda

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INCITS Secretariat, Information Technology Industry Council (ITI)

1250 Eye Street NW, Suite 200, Washington, DC 20005-3922

Email: incits@itic.org Telephone: 202-737-8888 FAX: 202-638-4922

12. Adjournment

Results of Meeting

1. Opening Remarks

John Lohmeyer called the meeting to order at 1:00 p.m. Tuesday, January 10, 2006. He thanked Bob Sheffield of Intel for hosting the meeting. As usual, the people present introduced themselves.

2. Approval of Agenda

The draft agenda was approved with the following additions or changes:

The following items were added/revised during the course of the meeting.

- 8.1 ALUA Topics (no proposal) [Binford]
- 8.2 Security Locking (no proposal) [Stevens]

3. Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for T10 membership. Working group meetings are open to any person or organization directly and materially affected by T10's scope of work. The following people attended the meeting:

Name	S	Organization
Mr. William Lynn	P	Adaptec, Inc.
Mr. Ron Roberts	A	Broadcom Corp.
Mr. Steve Robalino	A	Dallas Semiconductor
Mr. Kevin Marks	P	Dell, Inc.
Mr. David Black	A	EMC Corp.
Mr. Gary S. Robinson	P	EMC Corp.
Mr. Robert H. Nixon	P	Emulex
Mr. Ralph O. Weber	P	ENDL Texas
Mr. Walt Hubis	V	Engenio Information Tech.
Mr. Mike Fitzpatrick	P	Fujitsu
Mr. Nathan Hastad	P	General Dynamics
Mr. Michael Banther	V	Hewlett Packard Co.
Mr. Rob Elliott	P	Hewlett Packard Co.
Mr. Steven Fairchild	V	Hewlett Packard Co.
Mr. Dan Colegrove	P	Hitachi Global Storage Tech.
Mr. Kevin Butt	A	IBM Corp.
Mr. George O. Penokie	P	IBM Corp.
Mr. Robert Sheffield	P	Intel Corp.
Mr. Robert Payne	P	Iomega Corp.
Mr. Dennis Moore	AV	KnowledgeTek, Inc.
Mr. John Geldman	P	Lexar Media, Inc.
Mr. Steve Johnson	V	LSI Logic Corp.
Mr. John Lohmeyer	P	LSI Logic Corp.
Mr. Avraham Shimor	P	M-Systems
Mr. Mark Evans	P	Maxtor Corp.
Ms. Emily Hill	P	Microsoft Corp.
Mr. James Williams	P	Oracle
Mr. Tim Symons	P	PMC-Sierra
Mr. Craig W. Carlson	A	QLogic Corp.
Mr. Paul Entzel	P	Quantum Corp.
Dr. Paul Suhler	A	Quantum Corp.
Mr. Gerald Houlder	P	Seagate Technology
Mr. William Martin	P	Sierra Logic, Inc.
Mr. Charles Binford	A	Sun Microsystems, Inc.
Mr. Vit Novak	P	Sun Microsystems, Inc.
Mr. Roger Cummings	P	Symantec
Mr. Ron Mathews	AV	UNISYS Corporation
Mr. Curtis Stevens	P	Western Digital
Mr. Jeff Williams	P	Xiotech Corp.
Mr. Rich Ramos	P	Xyratex

40 People Present

Status Key: P - Principal
 A,A# - Alternate
 AV - Advisory Member
 L - Liaison
 V - Visitor

4. SCSI Architecture Model Topics

4.1 SAM-3: Converting to UML part 1 (04-023) [Penokie]

George Penokie requested that discussion of this topic be deferred to the next meeting.

4.2 SAM-4 LUN representation format (06-003) [Elliott]

Rob Elliott presented a proposal to add a SAM-4 subclause recommending how LUNs should be displayed to users (06-003r0). Problems were identified in text not relating to the proposal and Rob agreed to prepare a new revision that removes the offending text.

Rob Elliott moved that 06-003r1 (r0 as revised) be recommended for inclusion in SAM-4. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

4.3 SAM-4 More initiator port to I_T nexus changes (06-025) [Elliott]

Rob Elliott presented a proposal to change several instances of 'initiator port' to 'I_T nexus' (06-025r0). The proposed wording for the Retry Delay Timer changes was modified by the group and Rob agreed to prepare a new revision of the proposal.

Rob Elliott moved that 06-025r1 (r0 as revised) be recommended for inclusion in SAM-4. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

5. Command Set Topics

5.1 Reservations Proposals

5.1.1 Persistent Reservation Issue #346 (05-346) [Cummings]

Roger Cummings re-presented the proposal to modify the INQUIRY command to add a trace route feature (05-346r1). Roger noted that two out of three bridge vendors have addressed the issue that originated the proposal by rejecting PRESISTENT RESERVE OUT commands.

Roger asked if there was any interest in pursuing the INQUIRY command changes. Ralph Weber spoke against overloading the INQUIRY command with trace route features and suggested that the proposed changes should be abandoned since other ways of resolving the problem have been found.

Roger stated that he would no longer propose changing the INQUIRY command but might propose a command specifically for trace route usage. He requested that this item be removed from future agendas.

5.2 SCSI Primary Commands Proposals

5.2.1 SPC-4: Log Page-Subpages (04-389) [Butt]

Kevin Butt requested that discussion of this topic be deferred to the next meeting.

5.2.2 SPC-4: Log Command Corrections (05-232) [Penokie]

George Penokie asked that discussion of this topic be deferred to the next meeting.

5.2.3 SPC-4: Statistics and Performance Log Pages (05-248) [Penokie]

George Penokie presented a proposal to define log pages for reporting statistics and performance data based on group field contents and other per-command parameters (05-248r2). The group raised several concerns about the proposal including the possibility that a zero-valued priority would cause division by zero in some calculations.

George agreed to prepare a new revision for consideration at the next meeting.

5.2.4 SPC Security Commands proposal (05-157) [Houlder]

Gerry Houlder presented the latest revision of the TRUSTED OUT and TRUST IN commands definitions (05-157r8). Gerry explained that the SSC working group had requested a change to allow a Trusted Protocol to specify that TRUSTED OUT commands do not need to be followed by TRUSTED IN commands. Gerry also noted changes requested by SSC working group companies that allow byte counts for data to transfer in addition to 512 byte block counts. Gerry led the group through the specific changes made in 05-157r8 to address these requests.

Paul Entzel asked that the name be changed and the group agreed on SECURITY PROTOCOL OUT and SECURITY PROTOCOL IN and Gerry agreed to reflect the name change globally in the next revision.

David Black questioned the proposed subclauses defining certificate formats. He noted that processing issues regarding the use of extensions need to be specified. Gerry agreed to separate the certificate definitions into a new proposal, removing them from 05-157r9.

David Black moved that 05-157r9 (r8 as revised) be recommended for inclusion in SPC-4. Roger Cummings seconded the motion. The motion passed 17:0:7.

5.2.5 SPC-4 Create well known LUN for security commands (05-252) [Houlder]

Gerry Houlder presented a proposal to define a well-known logical unit for the commands defined in 05-157r9 (05-252r1). Immediately, he noted that the name change made in 05-157r9 needed to be reflected in the second proposal and agreed to prepare a new revision.

Gerry Houlder moved that 05-252r2 (r1 as revised) be recommended for inclusion in SPC-4. George Penokie seconded the motion. The motion passed 16:0:7.

5.2.6 SPC-4: Self Describing Command Timeouts (05-284) [Butt]

Kevin Butt asked that discussion of this topic be deferred to the next meeting.

5.2.7 SPC-4: Deferred microcode downloads (05-383) [Penokie]

George Penokie presented a proposal to allow the activation of downloaded microcode to be deferred (05-383r3). Rob Elliott expressed concerns about needing to modify SBC-3 to mention the newly created microcode-related side effect in the START STOP UNIT command. Other minor changes were requested. George agreed to revise the proposal.

George Penokie moved that 05-383r4 (r3 as revised) be recommended for inclusion in SPC-4 and SBC-3. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

5.2.8 SPC-4 SBC-3 SMC-3 Allow more commands through Write Exclusive reservations (05-368) [Elliott]

Rob Elliott presented a proposal to allow more commands through Write Exclusive reservations (05-368r1). He noted that comments had been received from the SMC working group and would be incorporated in a new revision of the proposal.

The SMC group asked to not change the READ ELEMENT STATUS requirement when the CURDATA field contains zero based on the time required to complete such a command. The group agreed with the request and Rob agreed to remove the change from the proposal.

The CAP group requested that the number of footnotes in the 'Reservations Conflicts' table be reduced to one for all previous versions of this standard and Rob agreed to modify the proposal.

George Penokie questioned allowing RECEIVE DIAGNOSTIC RESULTS. Rob responded that the command is needed for SES applications.

George Penokie recommended adding a coded value for only TEST UNIT READY support in the Allowed Commands field proposed for the Report Capabilities service action. Rob agreed to add another coded value defined as George suggested.

Rob Elliott moved that 05-368r2 (r1 as revised) be recommended for inclusion in SPC-4, SBC-3, and SMC-3. Kevin Marks seconded the motion. The motion passed 15:0:6.

5.2.9 Update SPC-4 version field (06-018) [Weber]

Ralph Weber presented a proposal to update the version field in the Standard INQUIRY data (06-018r0).

Ralph Weber moved that 06-018r0 be recommended for inclusion in SPC-4. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

5.3 SCSI Block Commands Proposals

5.3.1 SBC-3 SPC-4 Background scan additions (05-340) [Elliott]

Rob Elliott presented a proposal to enhance the background media scan function (05-340r2). The group requested several changes many of which were needed to bring the proposal in line with previously approved proposals.

Gerry Houlder commented on numerous specifics of the proposal and Rob agreed to revise it. George Penokie asked that the unrelated changes in SPC-4 be removed and Rob agreed to do so.

Rob Elliott moved that 05-340r2 (r1 as revised) be recommended for inclusion in SBC-3 and SPC-4. Gerry Houlder seconded the motion. The motion passed 11:2:7.

5.3.2 SBC-3 Physical blocks (06-034) [Elliott]

Rob Elliott presented a proposal to add reporting actual sector size and managing such information during FORMAT UNIT commands, READ CAPACITY commands, and related places in SBC-3 (06-034r0). The existing SCSI support for sector sizes other than 512 bytes was touted as providing all the information needed. Rob, Curtis Stevens, and others contested these claims.

Gerry Houlder complained vehemently about requiring disks to have specific sector sizes by specifying both the logical block size and number of logical blocks in a physical sector as part of the FORMAT UNIT command. Rob agreed to remove specifying the number of logical blocks per sector from the proposal, which resolved the complaint.

The logical block offset concept in the proposal was opposed by Dan Colegrove as a wart dating back to file systems' support for floppy disks. Rob reported on efforts to eliminate such offsets in Linux and hoped for modernization in Windows. While the logical block offset idea could not be eliminated completely, Rob agreed to reduce its presence to an absolute minimum and to take other steps to make using it less attractive.

Rob Elliott promised a revised proposal for consideration at the next meeting.

5.4 SCSI Enclosure Services Proposals

5.4.1 SES-2 Display element enhancements (05-011) [Elliott]

Rob Elliott requested that discussion of this topic be deferred to the next meeting.

5.4.2 SES-2 More Additional Element Status descriptors (06-036) [Elliott]

Rob Elliott presented a proposal to add an Additional Element Status descriptor for SCSI Initiator Port and SCSI Target Port elements that represent SAS ports (06-036r0). Minor problems were identified and Rob noted issues raised in messages on the T10 Reflector. Rob agreed to revise the proposal.

Rob Elliott moved that 06-036r1 (r0 as revised) be recommended for inclusion in SES-2. Kevin Marks seconded the motion. In the absence of any objections, the motion passed unanimously.

5.5 Other Proposals

No other proposals were brought before the group.

6. SCSI Protocol Topics

No SCSI Protocol topics were presented to the meeting.

7. Old Business

7.1 Style Guide (05-085) [Penokie]

George Penokie reviewed the teleconference discussions of the T10 Style Guide and led a quick review of the latest Style Guide revision (05-085r8). Recently discovered discrepancies between the T10 Style rules and the ISO equivalents were discussed and continuing existing T10 practices was agreed upon as the group's preferred course of action.

Rob Elliott noted that small caps were not used correctly in Annex B and George agreed to prepare a new revision.

George Penokie moved that 05-085r9 (r8 as revised) be recommended for posting on the T10 web site as the committee's official Style Guide. Bob Nixon seconded the motion. The motion passed 14:1:4.

7.2 IEEE OUI/company_id tutorial for SCSI (06-002) [Elliott]

Rob Elliott presented a proposed IEEE OUI tutorial (06-002r1). Concerns were raised about the lack of T13 support for including an OUI in the IDENTIFY PACKET DEVICE command. Rob agreed to remove section describing ATAPI usage and to make other minor changes.

Rob Elliott moved that 06-002r2 (r1 as revised) be recommended for forwarding to IEEE as the SCSI OUI tutorial. Bob Nixon seconded the motion. In the absence of any objections, the motion passed unanimously.

8. New Business

8.1 ALUA Topics (no proposal) [Binford]

Charles Binford requested and received advice regarding how to phrase a proposal to update the description of Implicit Mode operation to explain the difficulties induced by combining Implicit Mode and Standby State. The advice was to explain the target's obligation to determine end-to-end path accessibility in Implicit Mode and recommend against using Standby State when path accessibility could not be determined.

Charles reported that some host implementors are confused about how to use of the Preferred bit. The group concluded that the Preferred bit is completely advisory to initiators. Some initiator vendors reported that they ignore the Preferred bit.

Charles stated he would bring a proposal to the next meeting.

8.2 Security Locking (no proposal) [Stevens]

Curtis Stevens presented some ideas for a potential proposal to reflect the ATA Security Features in SCSI using the SECURITY PROTOCOL IN/OUT commands.

Concerns were raised regarding the applicability of Freeze Lock, using power cycles as an integral part of managing drive access, and other ATA-specific features to multi-initiator environments. The group agreed that Curtis should pursue an ATA-specific proposal that would clearly be a pass-through mechanism. Avraham Shimor stated that a proposal from P1667 for general password device protections commands was planned for March.

9. Review of Working Drafts

No requests were made to review working drafts at this meeting.

10. Review of Recommendations to the Plenary

Ralph Weber noted that the following recommendations have been made to the T10 plenary:

For inclusion in SAM-4:

06-003r1 (LUN representation format) [Elliott]

06-025r1 (More initiator port to I_T nexus changes) [Elliott]

For inclusion in SPC-4:

06-018r0 (Update SPC-4 version field) [Weber]

05-157r9 (Security Commands proposal) [Houlder]

05-252r2 (Create well known LUN for security commands) [Houlder]

For SPC-4 and SBC-3:

05-383r3 (Deferred microcode downloads) [Penokie]

05-340r2 (Background scan additions) [Elliott]

For inclusion in SPC-4, SBC-3, and SMC-3:

05-368r2 (Allow more commands through Write Exclusive reservations) [Elliott]

For inclusion in SES-2:

06-036r1 (More Additional Element Status descriptors) [Elliott]

For forwarding to IEEE:

06-002r2 (IEEE OUI/company_id tutorial for SCSI) [Elliott]

For posting as the T10 Style Guide:

05-085r9 (Style Guide) [Penokie]

11. Meeting Schedule

The next meeting of the SCSI Commands, Architecture, and Protocols Working Group will be Wednesday, March 8, 2006 from 9 a.m. to 8 p.m. (or until all agenda items are completed). The meeting will be in Hilton Head, SC at the Hilton Ocean Front Resort (843-341-8013) hosted by the SCSI Trade Association.

12. Adjournment

The meeting was adjourned at 4:45 p.m. on Wednesday January 11, 2006.